



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/754,032      | 01/08/2004  | Michael Weiss        | WET 0122 PUS        | 6079             |

7590 12/29/2004

Robert P. Renke  
Suite 250  
28333 Telegraph Road  
Southfield, MI 48034

|          |
|----------|
| EXAMINER |
|----------|

LUONG, VINH

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

3682

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/754,032

Applicant(s)

WEISS, MICHAEL

Examiner

Vinh T Luong

Art Unit

3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.


**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

  
Vinh T. Luong  
Primary Examiner

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1/8/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: Attachment.

Art Unit: 3682

1. The drawings are objected to because:

(A) The drawings should show the sectional plane upon which a sectional view such as Fig. 2 is taken; and

(B) The drawings are inconsistent with the specification or *vice versa*. For example, paragraph [0019] of the specification describes a foam jacket 8, however, Fig. 2 shows that the jacket 8 is formed of metal in accordance with drawing symbols for draftsman in MPEP § 608.02.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The disclosure is objected to because of the following informalities:

(A) The brief description of the drawings should describe the sectional plane upon

Art Unit: 3682

which a sectional view such as Fig. 2 is taken; and

(B) The specification is inconsistent with the drawings or *vice versa*. For example, paragraph [0019] of the specification describes a foam jacket 8, however, Fig. 2 shows that the jacket 8 is formed of metal in accordance with drawing symbols for draftsperson in MPEP § 608.02.

Appropriate correction is required.

3. The information disclosure statement filed January 8, 2004 fails to comply with 37 CFR 1.98(a)(2), which requires a legible complete copy of each foreign patent (WO 0128842); each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein (WO 0128842) has not been considered.

Applicant's copy of foreign reference WO 0128842 is incomplete. For example, the drawing pages that show Figs. 1-9 described in this reference are missing. In addition, note that the copy of DE 29802 appears to be inconsistent with the description in paragraph [0002] of the specification. In fact, the specification describes "[i]t is also known from DE 29802 to cool steering wheels with Peltier elements." However, its Figs. 1-9 do not show the steering wheel.

4. Claim 16 is objected to because of the following informalities: no antecedent basis is seen for the term such as "the grip *region*" in claim 16. Appropriate correction is required.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 3682

6. Claims 11-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "high" in claims 11-13 is a relative term which renders the claim indefinite. The term "high" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear, e.g., what range of thermal conductivity is considered to be "high thermal conductivity."

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-10 and 14-20, and claims 11-13, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Feher (US Patent No. 5,850,741).

Regarding claim 1, Feher teaches a steering device 12 comprising a cooling device 10 arranged therein, the cooling device 10 comprising at least one heat pipe including at least one heat-absorbing area 36 (Fig. 3) and at least one heat-emitting area 22, 24, the at least one heat-absorbing area 36 being located in a grip region 16, 18 of the steering device 12. *Id.*, Figs. 1-10 and claims 1-17.

Regarding claim 2, the heat-emitting area 22, 24 is located away from the grip region 16, 18 of the steering device 12.

Regarding claim 3, the steering device 12 is a vehicle steering wheel 12 including a circumferential grip region 46 and a center region (at 38 in Fig. 2) connected to the grip region 46 by at least one spoke (at 42 in Fig. 2), and wherein the heat-emitting area 22, 24 is located in the center region (at 38 in Fig. 2) of the steering wheel 12.

Regarding claim 4, the heat-absorbing area 36 is located within a circumferential annular groove 44 (Fig. 5) formed in the grip region 16, 18.

Regarding claim 5, the heat-emitting area 22, 24 is located to be in an air stream of a vehicle vent 32 (Fig. 8).

Regarding claim 6, Feher's steering device comprises at least one Peltier element arranged proximate the heat-emitting area 22, 24 of the cooling device 10. Id., col. 3, line 1.

Regarding claim 7, Feher's steering device comprises at least one fan 52 (Fig. 10) arranged proximate the heat-emitting area 22, 24 of the cooling device 10. Id., col. 4, lines 5-22.

Regarding claim 8, Feher's steering device comprises at least one fan 52 arranged proximate the heat-emitting area 22, 24 of the cooling device 10 directed toward a heat-emitting region of the Peltier element or the heat-emitting area 22, 24 of the cooling device 10. Id., col. 2, line 58 through col. 3, line 4.

Regarding claim 9, Feher's steering device comprises at least one fan 52 located remotely from the grip region 16, 18 and directed toward the heat-emitting area 22, 24 of the cooling device 10.

Regarding claim 10, Feher's steering device comprises at least one Peltier element (col. 3, line 1) located remotely from the grip region 16, 18, and wherein at least part of the Peltier element is arranged in the airflow of the fan 52 (Fig. 10).

Regarding claim 11, Feher's grip region 16, 18 comprises a jacket 26, 28 having high thermal conductivity to convey heat to the heat-absorbing area 36 of the cooling device 10.

Regarding claim 12, Feher's steering device comprises a cover (at 16 or 18 in Fig. 2) surrounding the jacket 26, 28.

Regarding claim 13, at least part 47 of the jacket 26, 28 includes metal powder, fibers or a thermally conductive paste (e.g., copper) proximate the heat-absorbing area 36 of the cooling device 10. *Id.*, col. 3, lines 56-67.

Regarding claim 14, the heat pipe houses a fluid (water or methanol) having an evaporation temperature between 25° C and 60° C. *Id.*, col. 3, lines 37-55.

Regarding claim 15, Feher teaches a steering wheel comprising a toroidal grip portion 46 comprising a rigid core (Fig. 5, see Attachment) surrounded by a jacket 26, 28; a center portion (at 38 in Fig. 2) connected to the grip portion 46 by at least one spoke (at 42 in Fig. 2); and a cooling device 10 comprising a heat pipe including a heat-absorbing area 36 arranged in at least part of the grip portion 46 and a heat-emitting area 22, 24 arranged in at least part of the center portion (Att.).

Regarding claim 16, the heat-absorbing area 36 is located within a circumferential groove 44 formed in the jacket 26, 28 of the grip region 16, 18.

Regarding claim 17, the heat pipe comprises a closed tube having a transport device lining at least a portion of the inner tube wall and defining a fluid volume in the heat-absorbing area 36 and a fluid and gas-exchange volume in the heat-emitting area 22, 24 of the cooling device 10 as seen in Fig. 3.

Art Unit: 3682

Regarding claim 18, the jacket 26, 28 includes metal powder, fibers or a thermally conductive paste (e.g., copper) proximate the heat-absorbing area 36 of the cooling device 10. Id., col. 3, lines 56-67.

Regarding claim 19, Feher's steering wheel comprises at least one Peltier element arranged proximate the heat-emitting area 22, 24 of the cooling device 10. Id., col. 3, line 1.

Regarding claim 20, Feher's steering device comprises at least one fan 52 (Fig. 10) arranged proximate the heat-emitting area 22, 24 of the cooling device 10.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Kerner et al. (fan 15), Kim (pipe 6, 7), Roske et al. (fluid 18), Noda (fluid 100), Nakagawa et al. (fan 4), and Bruno (Peltier element).


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vinh T. Luong whose telephone number is 703-308-3221. The examiner can normally be reached on Tuesday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bucci can be reached on 703-308-3668. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Luong

December 23, 2004



Vinh T. Luong  
Primary Examiner



# **ATTACHMENT**

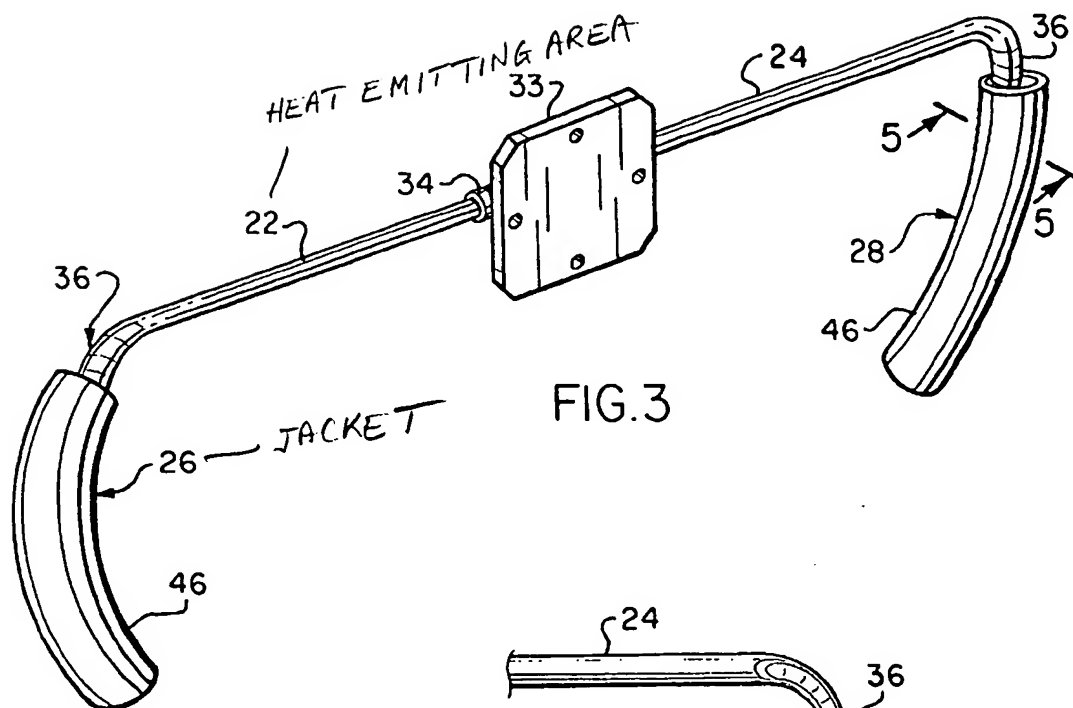


FIG.3

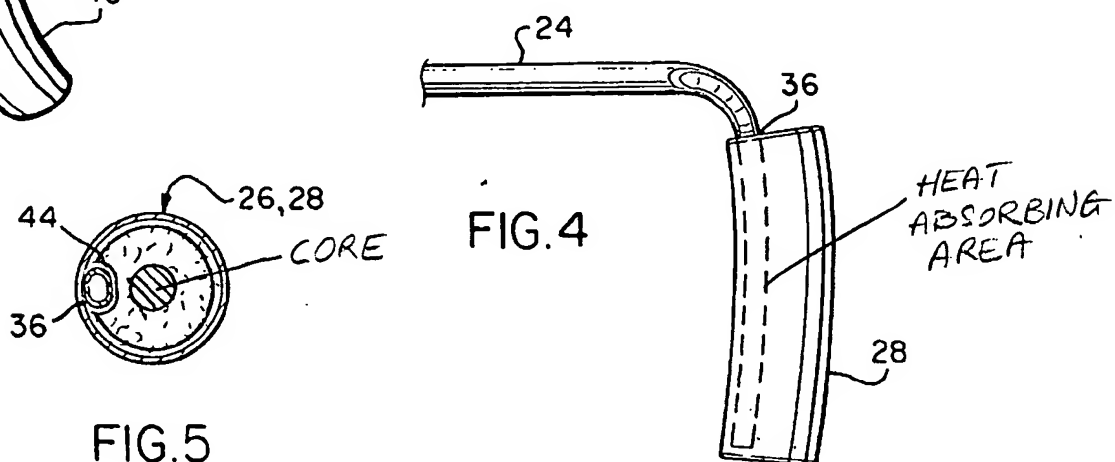


FIG. 4

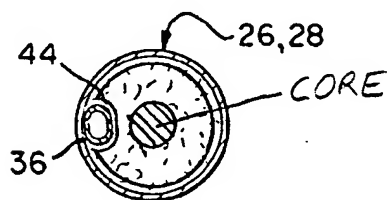


FIG.5

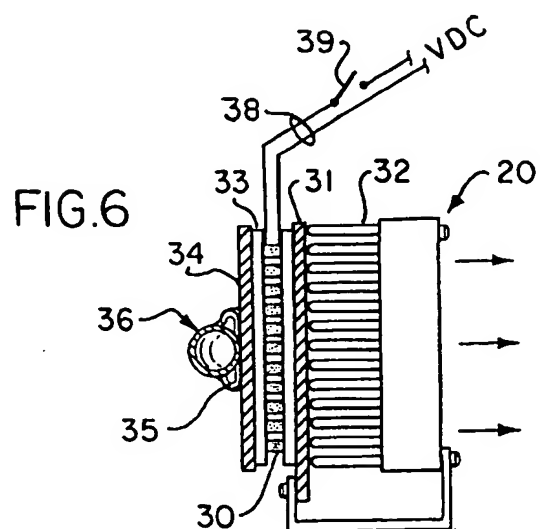


FIG.6